Telephony

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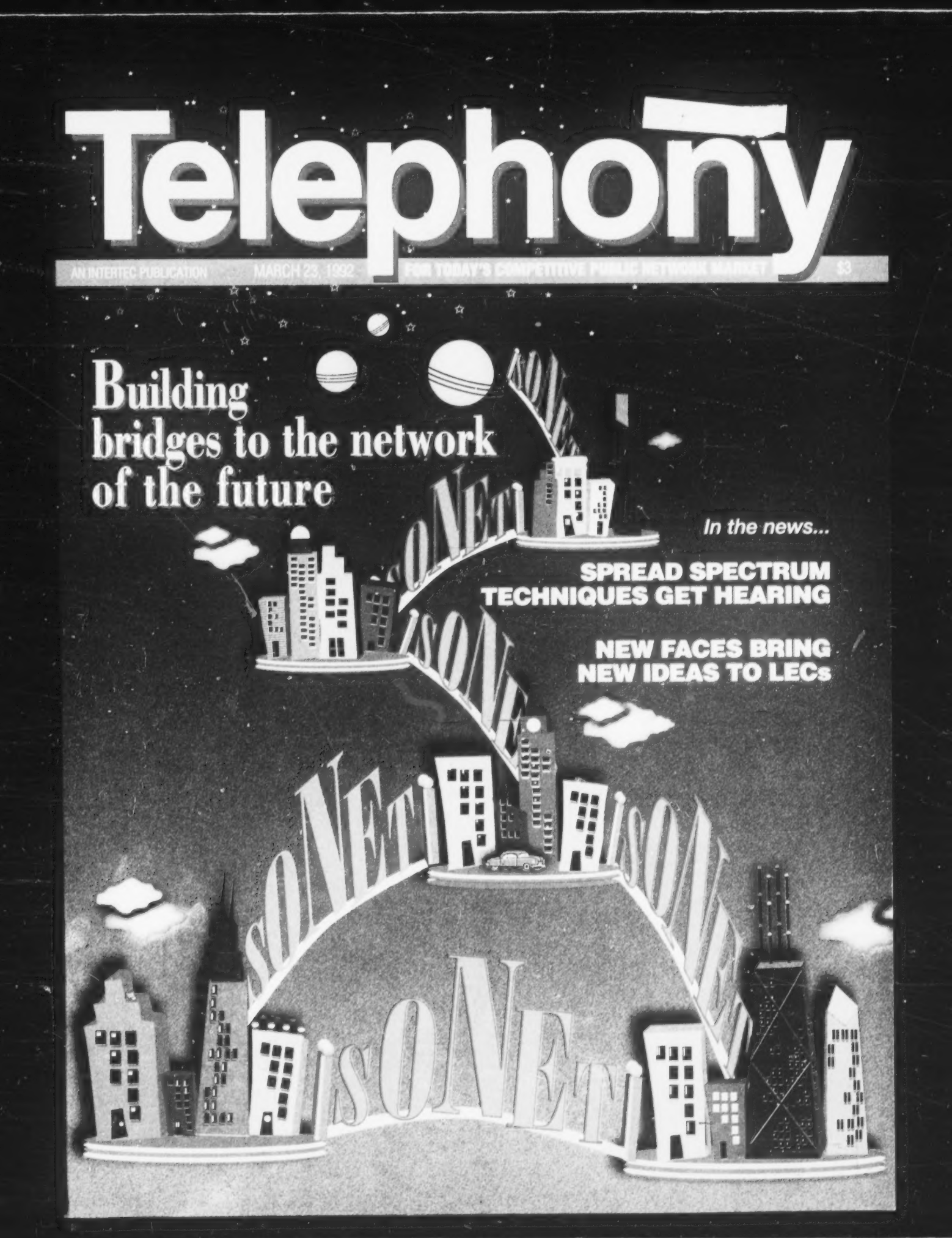
Building bridges to the network of the future
In the news...
SPREAD SPECTRUM TECHNIQUES GET HEARING
NEW FACES BRING NEW IDEAS TO LECs
SONET

MONDAY, MARCH 23, 1992 Volume 222, No. 12

Telephony

FOR TODAY'S COMPETITIVE PUBLIC NETWORK MARKET

COVER STORY 24

BUILDING BRIDGES TO THE NETWORK OF THE FUTURE
By Bob Conroy. Originally designed to eliminate back-to-back channel banks, digital cross-connect systems have become the workhorses of telecommunications networks worldwide. They will remain well-positioned to help the network cross over the SONET bridge
Cover art by Deborah Zajac, courtesy of Tellabs

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Qualcomm, SCS Mobilecom and Ericsson outline their system specifics in the first of three scheduled forums

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The interface will offer computer networking power to telemarketing operators, security agencies and other professionals

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Although not the intelligent network-based "follow-me" service ultimately envisioned, Bell Atlantic Mobile Systems' new service allows cellular customers to direct calls to voice mail, home, office and other numbers

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Three companies vie for CTIA endorsement

Ann H. Lindstrom, Assistant Editor

While politicians battled for votes in the Illinois primary last Tuesday, Qualcomm Inc., Ericsson Radio Systems and SCS Mobilecom Inc. spent the day in Rosemont, Ill., stumping for support for their wideband/spread spectrum options for second generation digital cellular systems.

More than 100 people attended the first of three scheduled open technology forums, sponsored by the Cellular Telecommunications Industry Association. The forums will help CTIA determine which option, if any, it will encourage the Telecommunications Industry Association's TR45.5 wideband/spread spectrum standards committee to pursue, said Bruce DeMaeyer, Ameritech Mobile Communications president and CTIA's wideband/spread spectrum committee chairman. The TR45.5 subcommittee will meet for the first time in Dallas on March 30.

"This forum gives everybody a chance to hear the proposals and to smoke out potential weaknesses," said DeMaeyer. "There are a lot of people here asking questions that the CTIA subcommittee may never have thought about."

To be eligible for consideration, proposed technologies had to offer a tenfold increase over analog system capacity, privacy, long life and an adequate growth cycle, and an ability to introduce new features and quality improvements. The systems also needed to allow for easy transition to digital, be available early and at reasonable costs, and be based on Cellular Open Network Architecture.

"Qualcomm's direct sequence-CDMA (DS-CDMA) is the long-term solution for the cellular industry," said Irwin Jacobs, president and CEO of the San Diego-based company. "It will provide for true personal communication systems in the cellular frequency band."

DS-CDMA operates using 1.25-MHz spreading bandwidth and increases cellular network capacity up to 20 times that of analog systems, he noted. It features soft handoffs, universal frequency reuse, a shared pilot on the forward channel and a variable rate voice-operated coder.

"With 1.25 MHz you get very good diversity and voice quality that you don't get with the other systems," said Jacobs in support of his system.

Even though Ericsson Radio Systems makes first generation digital cellular time division multiple access (TDMA) equipment, the company proposed two wideband/spread spectrum options—frequency hopping multiple access (FHMA) and CDMA with interference canceling (CDMA-IC).

However, wideband digital cellular will only be needed if and when there is a market for wideband services, said Jan Uddenfeldt, vice president and general manager-research and development, during his presentation. Within the next two years, he said, TDMA will evolve to accommodate up to 10 times the capacity of analog systems, and future technologies stand to gain from feedback regarding first generation implementation.

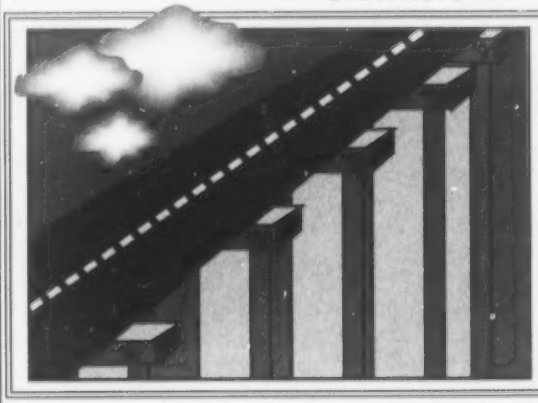
With FHMA, each carrier bandwidth is 210 kHz and all frequencies are reused at every cell, said Uddenfeldt. Also, there is no interference between users in the same cell. FHMA will be able to accommodate up to 15 times the capacity of analog systems, he added.

CDMA-IC incorporates 210-kHz spacing and involves cancellation of interferers within the same cell and between cells. The technology offers a capacity increase of up to 65 times that of analog systems.

Unlike the other proposals, SCS Mobilecom's option would initially work as an overlay network placed on top of existing TDMA or analog networks. Broadband spread spectrum CDMA (B-CDMA) operates in the 1850-MHz to 1990-MHz band and occupies 48 MHz of bandwidth. B-CDMA realizes its greatest gains when it is not used as an overlay network—from 10 times to 25 times the capacity of analog systems.

B-CDMA, however, offers nominal gains when placed over analog or TDMA sytems, but it allows a provider to add capacity without taking existing users off, said Don Schilling,

CTIA FACTS



Cellular industry grew 43% in 1991, adding 2.3 million subscribers in 12 months

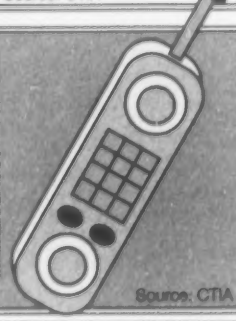
GROWTH FIGURES

Dec. 1987	1,230,855
Dec. 1988	2,069,441
Dec. 1989	3,508,944
Dec. 1990	5,283,055
Dec. 1991	7,557,148

Source: CTIA

Average monthly bill and average call length

1987	$96.83	2.33 minutes
1988	$98.02	2.26 minutes
1989	$89.30	2.48 minutes
1990	$80.90	2.20 minutes
1991	$72.74	2.38 minutes



Source: CTIA

president of the Port Washington, N.Y., company.

"Some service providers will not accept the CDMA standard; they want to go to TDMA," said Schilling. "Because I can overlay B-CDMA on top of their TDMA, I have a sure market. I don't have to kick anyone off to get some market share. The others are talking about kicking off 10% of the users, who will be unhappy."

Those who presented proposals last week have until the next forum on April 14 to answer more detailed questions, which CTIA will funnel to the companies from inquirers until then, said DeMaeyer. A third forum will be held only if necessary.

TCI, McCaw team for PCS

Charles F. Mason, East Coast Bureau Chief

Tele-Communications Inc., one of the country's top cable TV providers, has made another bid to enter the local exchange business. The company disclosed last week that it is joining with McCaw Cellular Communications to test a residential personal communication system (PCS) in Ashland, Ore. The companies plan to use their respective CATV and cellular networks to support the trial.

The six-month test will involve portable phones and provide 200 customers with communications capabilities both in and out of the home, according to the companies. Four low-power microcells operating on cellular frequencies have been installed in Ashland.

The microcells are interconnected with McCaw's cellular system in the city via TCI's fiber optic cables. Customers will be able to choose conventional cellular service outside of the range of the microcells.

The trial is the first of its kind in the U.S. to sell a combined residential and local wireless service to the public, McCaw said.

"This is an exciting test of wireless and cable technologies and provides us a chance to gather some vital information from customers," said Craig McCaw, chairman and CEO of McCaw.

Many within the cellular and CATV industries are eager to offer PCS. The move by TCI is but one of several recent business decisions to become an aggressive entrant in telecommunications.

Last month, for example, TCI and Cox Enterprises announced they were taking over Teleport Communications Corp., a competitive access provider with operations in several top cities, including New York *(Telephony, Feb. 24, page 8)*. The decision was seen by industry observers as another step toward placing the CATV industry into position to offer a range of new communications services, including PCS. Both companies, along with other CATV operators, have received experimental licenses from the Federal Communications Commission for PCS trials.

IBM readies CallPath-CO link

Charles F. Mason
East Coast Bureau Chief

IBM will connect its CallPath computer/telephone system interconnection product line to Northern Telecom's DMS-100 central office switch. This is the first CallPath link to a CO switch and comes almost 18 months after a trial announced in 1990 between IBM, Nynex, Northern Telecom and Syracuse University *(Telephony, Nov. 12, 1990, page 11)*.

"This means that customers will no longer need their own PBX to take advantage of the features offered by CallPath," said Dan McIntyre, director of networking and voice solutions marketing for IBM, during a press conference last week.

The CallPath-CO link is facilitated by a special switch-to-computer

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TELEFOCUS

Telcos refocus on marketing with fresh faces and fresh ideas

A welcome mat or a wary eye?

Richard Karpinski, Assistant Editor

Nancy Pitz had, in her own words, "the mechanical aptitude of an earthworm," when she was named to the top marketing post at Centel Corp.'s Central Telephone Co. a year and a half ago.

Fresh from a 20-year stint in marketing at Quaker Oats—where she mainly helped sell cereal and dog food—Pitz didn't know POTS from an AIN from an ISDN.

"I had never worked in an industry with such acronyms," she recalls. "I sort of felt like I'd landed in Russia and didn't speak the language."

Yet today, Pitz has helped instill a marketing savvy that enables Centel to better develop and sell emerging services such as custom local area signaling services (CLASS). The key was not what she didn't know—technology—but what she did know—marketing in a competitive, consumer-oriented environment.

"There's a real tendency in this industry, because people have such long tenure and such detailed knowledge of the business, to give [technology] a level of importance that the customer doesn't share," Pitz says. "Somebody's got to bridge that and make it easier for the customer. I think that's the biggest thing I bring to Centel."

Centel executives clearly believe you can never have too much of a good thing: About the same time Pitz was hired, Michael Connelly, also from

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